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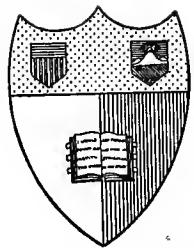
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Consolidated SPRUCE GREEK Placers

Atlin, B.C.

The title is set within a decorative frame. The background of the frame features a stylized landscape with rolling hills or mountains in blue and grey tones. A winding path or riverbed is depicted in the lower left, leading towards the horizon. The overall style is reminiscent of early 20th-century commercial art.

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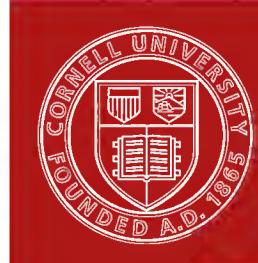
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Consolidated Spruce Creek Placers, Limited

OF SEATTLE, WASH.

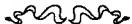


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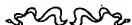


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**INTRODUCTORY
STATEMENT**

THE Consolidated Spruce Creek Placers, Limited, of Seattle, Washington, holds concessions from the British Columbia government in the Atlin district covering four miles in length of the great paystreak on Spruce creek out of which over a quarter of a million dollars in gold has already been washed. A description of this rich placer ground will be found in the following pages.





\$4,000,000 OF PLACER GOLD ON SEATTLE DOCKS FROM THE NORTH.



BRIEF HISTORY OF PLACER GOLD MINING

In ancient times, long before the reign of King Solomon, gold became a prominent factor in the commerce of the world. Through the aid of Hiram, King of Tyre, a fleet was fitted out at Ezion-Geber, on the coast of the Red Sea, and after a three years' voyage, it returned from the Ophir mines laden with the fabulous sum of four hundred and twenty talents of gold, valued at \$11,037,600. The land of Ophir remains a hidden mystery to this day.

Gold was Always a Commercial Factor

Exploration has disclosed the fact that mining operations were carried on many centuries ago in Southern Africa in the spur of the same gold and diamond belt that Cecil Rhodes and Alfred Beit have worked so profitably. Ancient flumes, tunnels, shafts, mortars and arastras have been discovered there, showing that both placer and quartz mining were carried on. Stone docks and quays, of the character built during the time of Solomon, have been found still standing, but in a state of almost complete decay. Since this time Cecil Rhodes has become the strongest financial figure in South Africa. Alfred Beit, known to be worth one billion dollars and believed to be the richest man in the world, has a constantly increasing revenue, the volume of which, perhaps, was never equalled in King Solomon's most ambitious dreams. These men took advantage of the opportunity when it came to them, remembering that "there is a tide in the affairs of men which, taken at its flood, leads on to fortune."

South Africa a Mining Camp Centuries Ago



A \$550 ATLIN NUGGET.

The history of the world is full of such examples. Columbus found the Caribs, of the coast of South America fronting on the Caribbean Sea, wearing amulets, anklets, bracelets, necklaces and immense earings of gold, the intrinsic value of which they knew little.

The conquest of Mexico and Peru by Cortez and Pizzazro, respectively, while made in the name of the Cross, was really done to obtain the enormous quantities of glittering gold possessed by the natives. Prescott, the historian, relates that Pizzaro found in the treasury of the Sun Worshippers of Peru a room sixteen feet square piled with gold plate, beaten ornaments and nuggets as high as a man could reach on a wall. From the time of Hiram, King of Tyre, to the discovery of gold in California, followed by that in Australia, Cariboo, Dawson, Atlin and Nome, placer deposits have been the chief source of the world's supply of gold. Nearly \$3,000,000 have been taken out of Atlin by shoveling into sluice boxes. If money can be made by shoveling this gravel by hand, how much more can be realized by working the ground by the latest improved hydraulic mining machinery? That the profits will be great, is certain.

The greater part of the world's gold production has been obtained from auriferous Placer Gold Mining gravels. Statistics show this.

The action of water in some form, disintegrates and transports the constituents of rocks, among which in certain localities gold is found. Hence for centuries the detritus in the beds of channels has been dug out and washed for the gold that it carries.

The economical working of vast deposits of low-grade gold-bearing gravel received Low Grade Mining
the Best Investment much attention during the latter half of the nineteenth century in the gold fields of California



CARIBOO CROSSING, ON ROUTE TO ATLIN.



A MINER'S DITCH, ATLIN DISTRICT, B. C.

and elsewhere, and the hydraulic method of mining, by which the gold-gravel is moved with the aid of water under pressure, has in the past fifty years been so perfected that "dirt" carrying but a few cents of gold per cubic yard is now mined at an enormous profit. As an instance, the well-known North Bloomfield Mine, of Nevada County, California,
North Bloomfield
Hydraulic Mine

paid large dividends for a long period. The average value of gravel mined was less than 10 cents per cubic yard.

According to A. J. Bowie, in his well-known book on Hydraulic Mining, California alone produced \$1,100,000,000 in gold from the first discovery in 1849 to 1883. Since that date up to 1901, R. E. Preston, Acting Director of the Mint at Washington, states that \$246,856,600 more of the precious metal has been taken out. Nearly all of this vast sum has been washed from alluvial gravels.
Gold Production in California

Another method of working gold gravel deposits, first successfully applied in New Zealand, but now largely used and a source of much wealth in California, is by dredging. Gravel is now being worked by means of large dredges at a cost of less than ten cents per cubic yard. These are two of the usual methods of mining low-grade gold bearing gravel.
The Two Ways

To some conditions the hydraulic method of working is best adapted, while to others, dredging is to be recommended. Where a large water supply under high pressure, a proper sluice-grade from bed-rock, and a good dump are available, mining by the hydraulic method is the way to financial success.



SKAGWAY, THE GATEWAY TO THE ATLIN GOLD FIELDS, VIA THE WHITE PASS & YUKON R. R.

The Atlin District, where the property of the Consolidated Spruce Creek Placers, Limited, is situated, is in the northern part of British Columbia at the headwaters of the mighty Yukon River. The general level of the country is two thousand feet above the sea, with which it is connected, by way of the lakes to Cariboo, and thence by the W. P. & Y. railroad, to the port of Skagway. Communication between Skagway, Victoria, Vancouver and Seattle is constantly and regularly maintained by fine steamers of four large navigation companies.

Atlin is in the great gold belt that is known to extend northwesterly from Cariboo through the famous Klondike region to the shores of the Arctic Ocean.

The climate of the Atlin country is very much milder than that experienced in the Yukon basin generally, the temperature being higher in winter and lower in summer than that prevailing further north. No frozen ground is encountered in the summer time in Atlin, and the working season extends over a period of five months.

The camp was established in 1899. Gold was discovered in the previous year and since then placer miners have taken out nearly \$3,000,000 in gold.

The Consolidated Spruce Creek Placers, Limited, has sixteen mining concessions from the Government. These concessions embrace a length of four miles on Spruce Creek and extend up the latter stream from its junction with Pine Creek. The Corporation also owns two water rights, which give it the use of 1500 miner's inches of water from Spruce Creek and little Spruce Creek. These water grants can be supplemented as working requirements demand.

The mining concessions owned by the Corporation are in the form of leases from the

The Atlin District—
How to Get There

The Great Northern
Gold Belt

A Long Working
Season

Property of the
Consolidated Spruce
Creek Placers



Courtesy of Engineering and Mining Journal, New York.
FLUME FOR TAKING WATER FROM PINE CREEK, TO BE USED IN HYDRAULIC MINING, ATLIN, B. C.

Government which have been granted for a term of twenty years, and are renewable at the end of that period.

These concessions have been demarcated and surveyed by the Government of British Columbia, and the plans are on file in the Gold Commissioner's Office in Atlin, B. C. Security in regard to title is thus assured.

An important advantage that these leases carry is the prior right to acquire any mineral ledges that may be uncovered in the course of mining operations, and everything points to the probability of rich gold quartz veins being found. Mineral Ledges may be Found

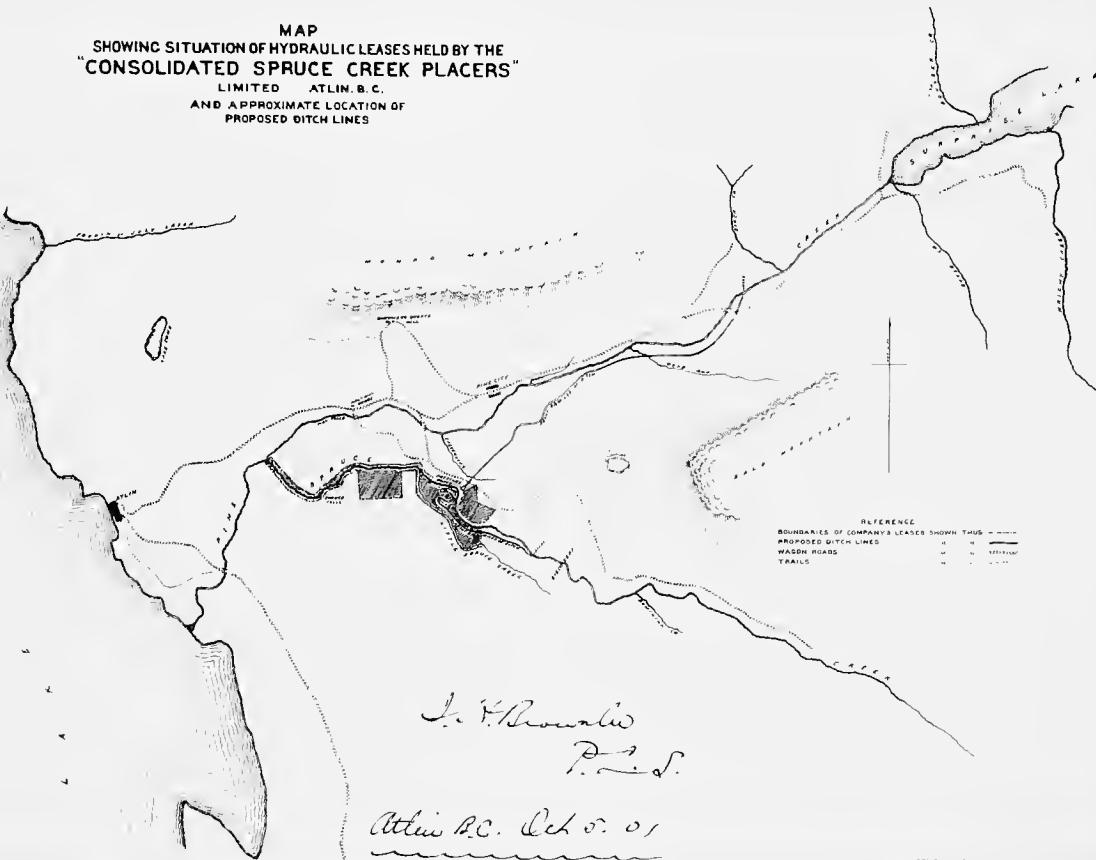
A royalty of 2 per cent. of the gross output of all mines is levied by the Government Protection to the Miner of British Columbia.

The revenue thus realized is devoted to the improvement of communications, the construction of roads, bridges, etc., and to maintaining officers for the protection of life and property. Effective protection is everywhere afforded.

The estimate of 10 cents per cubic yard for cost of operation is undoubtedly high enough to more than provide, also, for the small royalty of 2 per cent. which the Government receives. Many placer mines with conditions no more favorable than this have been worked for 5 cents and less per cubic yard.

From the point where Little Spruce joins the main creek for about two miles up the latter stream, the benches covered by this property have been well prospected by placer miners. As related in the annexed reports by engineers who have examined the ground, the extent of the gold gravels is very large and of great value. Property Thoroughly Prospected

MAP
SHOWING SITUATION OF HYDRAULIC LEASES HELD BY THE
"CONSOLIDATED SPRUCE CREEK PLACERS"
LIMITED ATLIN, B.C.
AND APPROXIMATE LOCATION OF
PROPOSED DITCH LINES



COMPANY'S PROPERTY INDICATED IN BLACK.

Scale 2½ miles per inch.

COMPILED BY BROWNLEE & LOWRY, ATLIN B.C.



EPORT OF W. H. HILE, A. M., M. E., of Philadelphia, ON PROPERTY OF THE CONSOLIDATED SPRUCE CREEK PLACERS, LTD.

Soon after gold was first discovered in the Atlin District, B. C., late in the fall of '98, I sent two assistants from our Juneau mines to examine into the facts. Their reports were very flattering. When I reached Philadelphia, some thirty days later, I submitted a report to the Last Chance Mining Co., and, as a result, I was sent in the following spring to Atlin to prospect the country thoroughly. I arrived in the District with men, horses and necessary equipment March 2, 1899, and remained the entire summer.

My attention was first directed to Pine Creek. After doing considerable work upon the same I abandoned it, for the reason that I regarded Spruce Creek, upon which your property is located, of much more importance. Moving my men and outfit over to Spruce Creek, the entire summer was spent in prospecting. At this time there were many men on the creek who owned one hundred foot claims and were working them, therefore I had an opportunity to learn the value of the ground from what they had done, as well as from work done by my own men. I spent my time directing new work on the creek, taking levels, grades, measuring the water supply, etc. (all of which data I have), between the mouth of the creek and Discovery Claim, a distance of five miles. I know the value of gravel in hundreds of prospect holes, shafts and tunnels on Spruce Creek. Not one on the pay channel shows a value of less than \$1.00 per cubic yard and from that to \$10.00 and upwards.



A VIEW OF PORTION OF THE COMPANY'S PROPERTY.

My efforts to secure the grounds by purchase met with failure. I left a man there two years, who has kept me fully posted as to developments, as I desired to obtain the property. Thinking the time was ripe for a favorable deal, I returned this fall only to find that the Consolidated Spruce Creek Placers, Limited, had, much to my regret, secured it.

I find that every natural condition is perfect for the successful and economical working of this ground. The gravel is exceptionally rich.

I have seen Mr. Lowry's detailed technical report as well as the company's statements, and I fully endorse both.

The creek has already produced by hand washing over a quarter of a million dollars in coarse gold. This is simply development work. Real mining remains yet to be done.

This mine, as compared with the now famous "Sweepstake" hydraulic mine of Trinity County, California, which I examined last fall, reported upon, and which was thereafter sold for \$5,000,000 to Philadelphia parties, is in every point greater. It is richer and more extensive.

I consider this property the best I have examined, and if properly handled it will prove one of the greatest dividend paying mines ever yet opened.

Respectfully,

W. H. HILE, A. M., M. E.,

General Manager "Last Chance Gold Mining Co."
Consulting Engineer "Quaker City Gold Mng. Co."
Consulting Engineer "Alaska-Atlin Gold Mng. Co."



Courtesy of Engineering and Mining Journal, New York.
HYDRAULIC MINING, ATLIN DISTRICT, B. C.



EPORT OF E. P. SPAULDING, M. E.

ON PROPERTY OF THE
CONSOLIDATED SPRUCE CREEK
PLACERS, LTD.

LOCATION.

The property owned and controlled by the Consolidated Spruce Creek Placers, Limited, is situated in Atlin Mining Division, Cassiar District, British Columbia, about six miles from the town of Atlin, B. C., and constitutes approximately four miles of the best portion of Spruce Creek, together with a half mile of Little Spruce Creek, a tributary of Spruce Creek proper.

CLIMATE.

Having been on the ground during a portion of the winter season as well as in the summer season, I can bear personal testimony to the fact that the winter season is not as severe, or any more so, than in many of the Northern States of this country, while the summer season lasting about five months, is most delightful.

GENERAL STATEMENT.

My personal knowledge of the Atlin District in general and Spruce Creek in particular, is based upon two visits made by me during the year 1900 in the interests of Chicago and New York capitalists. During these two visits, constituting in all about sixty days, I made a very thorough investigation of the entire district, selecting Lower Spruce Creek as that portion of the field which, to my mind, offered the best opportunity for hydraulic mining on



PLACER MINING, SPRUCE CREEK, ATLIN DISTRICT, B. C.

a large scale that has ever come under my personal observation. The values found by me after testing nearly every one of the many openings along the creek, both in the benches, as well as in the creek bed, and the natural facilities, including water supply and dump, were so unusually good that I at that time made a very confidential report to my clients, advising them to secure the whole creek. After my return to New York, and following unavoidable delays, I was authorized to secure the existing rights along this four miles of Spruce Creek only to find, after negotiations, that the Consolidated Spruce Creek Placers, Limited, had secured control of this valuable territory.

GEOLOGICAL.

Spruce Creek is one of the important creeks of the District, and next to Pine Creek, of which it is a tributary, it is the largest in the district. Its length is about 15 miles from the junction with Pine, and the enormous quantity of gravel deposits on either bank, rising from 125 to nearly 300 feet above bedrock in the present creek, bears ample testimony to the fact that in recent geological time this has been a much larger stream, if, in fact, not the main drainage channel of the whole district. There are also evidences pointing to the probability of the original river bed or channel having been filled, or partly so, with gold bearing gravel as the result of glacial action, the record of which is very clear, and that subsequently the present stream, known as Spruce Creek, has cut its way down through this old wash, or deposit.

WATER SUPPLY.

On the 15th day of July, 1900, I measured the flow of water in Spruce Creek at a point between Little Spruce and Dominion Creeks, and found it to be 2,500 miners' inches. From



A VIEW LOOKING UP SPRUCE CREEK, SHOWING THE UPPER PORTION OF THE COMPANY'S PROPERTY.

the most reliable data that I could obtain, this seems to be about the average flow that might be expected throughout the season. Earlier in the season the flow is much greater, amounting to probably not less than 5,000 miners' inches. It will be possible at a reasonable expense to increase the average supply of water to 4,000 or 5,000 inches by diverting water from either or both O'Donnell River Valley or Surprise Lake, the latter being at the head of Pine Creek. This water can be utilized under an effective head of 175 to 250 feet.

GRADE AND DUMP.

From barometric observations and levels run with an instrument by myself, I find the average grade of the creek surface to be slightly over three per cent. Below Spruce Falls ample dump is available and is controlled by the Company.

TITLES.

I have personally investigated the titles of the property under consideration and find them to conform to the requirements of the mining laws of British Columbia.

DEVELOPMENTS AND RESULTS.

At the time of my visit there had been considerable work done along the creek at various different points by individual owners, both in the creek bed and in the benches on either side. I was given every opportunity to thoroughly investigate these numerous openings, which I did with satisfactory results. I also spent many days along the creek in observing the work in progress and the daily clean-up, all of which merely corroborated the results of my own tests and strengthened my favorable opinion of the ground under consideration. From the results of my personal tests, ranging from \$1 to over \$10 per cubic yard, and



THE TOWN OF ATLIN



N FROM LAKE ATLIN.



TUNNEL ON COMPANY'S PROPERTY, ON SPRUCE CREEK, FROM WHICH \$3900 HAS BEEN TAKEN.

from the results of the daily work along the creek before mentioned, I do not hesitate to give it as my opinion that an enormous quantity of available gravel within the limits of the Consolidated Spruce Creek Placers, Ltd., will afford an average product of at least 75 cents to \$1 per yard.

The duty of a miners' inch of water working under an available pressure of 250 feet, considering the character of the material to be moved and the conditions pertaining to grade and dump, should range from two to five cubic yards per 24 hours. Hence, as a conservative estimate, there should be moved each 24 hours, using 4,000 miners' inches of water, at least 8,000 cubic yards of gravel. I consider 75 cents per cubic yard as a very conservative estimate of the average value which may be expected from each cubic yard of this material moved, making a gross output of say \$6,000 per day, or, for the working season of 120 to possibly 150 days, say \$720,000.

The cost per yard for all work in connection with the operation I estimate at from 6 to 10 cents. At the latter figure the cost of operation for the season would amount to, say, \$100,000, leaving as a net income over \$600,000.

While I believe that the foregoing are conservative estimates based upon certain known facts and conditions, actual results of operations of this character and magnitude rarely coincide with the estimates, no matter how carefully they may be made, consequently it will be prudent to consider, say 50 per cent. of the above estimate, or \$300,000 per season, as the actual net income.

It is impossible to correctly or closely estimate the quantity of gravel available in the ground under consideration, but that it is enormous there can be no question. I estimate



SHOWING THE PAYSTREAK ON LOWER SPRUCE CREEK.

that, working upon the scale outlined, it will require at least from twenty to thirty years to exhaust the visible supply of pay gravel.

While there are no unusual engineering problems to be solved in connection with this property, they are, however, of a character that require care and ability in their solution, and in the proper placement of the necessary plant for the economical operation of the property. I have carefully gone over the specifications and estimates of Mr. R. C. Lowry, whom I know to be an engineer of unusual ability and wide experience, and I unhesitatingly indorse his specifications and estimates, as well as his general report on the property, in every respect.

While I have absolute faith in the future of this property, it requires careful, intelligent management and ability in its engineering department. Given these two requisites, there is no question but that it will produce most satisfactory dividends for many years to come; and I take pleasure in recommending it to favorable consideration.

In further evidence of my faith in this property, I will quote briefly from a confidential letter to one of my clients, whose name I am not at liberty to give: "I have been over and tested the ground myself; have spent days along the creek watching the men at work picking and shoveling into sluice boxes, and noting what their approximate results were. There is no doubt in my mind as to the ultimate outcome of the property, if worked as a whole in the proper way. The gold is there beyond doubt and can be won very profitably."

E. P. SPALDING,
Mining Engineer, New York City.

Seattle, Wash., November 30th, 1901.



A VIEW ON THE COMPANY'S PROPERTY, FROM WHICH WAS TAKEN A \$1000 NUGGET.



XTRACTS FROM REPORT OF FLETCHER T. HAMSHAW.

* * * *

I find that Spruce Creek contains a minimum amount of 2,000 miners' inches of water; also that additional water can be brought in from O'Donnell Creek tributaries.

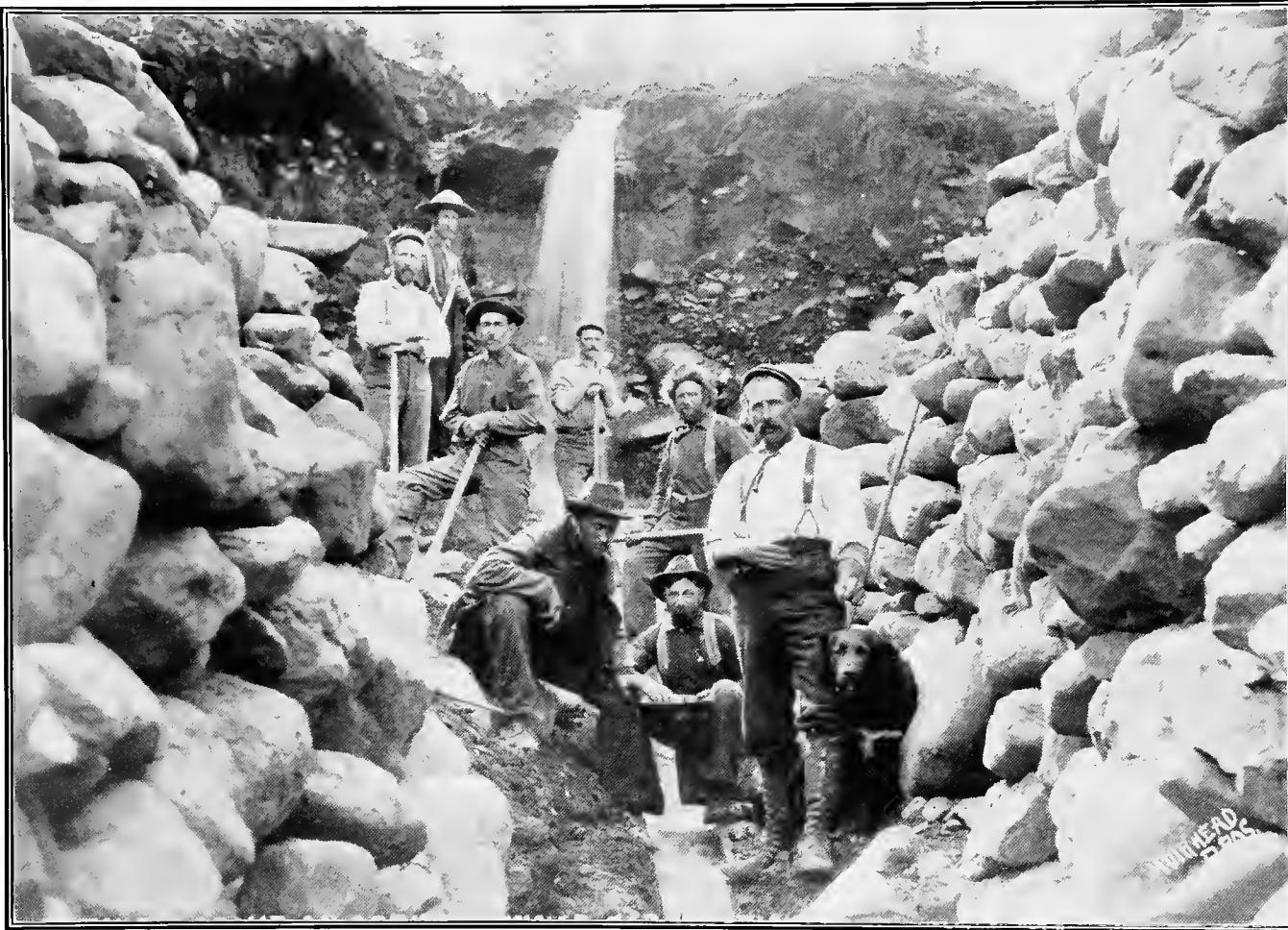
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That for the year 1900 the workers on the claims paid the Government royalty on \$36,000 and that there has been taken from this creek and benches abutting this property one-quarter of a million dollars; that in the work of prospecting there have been 18 drifts run, aggregating 1,200 feet in length, and that the prospects run from \$1.00 to \$10.00 per cubic yard.

* * * *

Water can be brought at an elevation of over 250 feet. This would give an effective head of over 200 feet.

FLETCHER T. HAMSHAW,
Hydraulic Mining Engineer.
New York City.



MINING ON THE DUCHESS CLAIM.

EXTRACTS FROM REPORT OF THOMAS FRENCH, JR.

Late Professor of Physics, University of Cincinnati.

During the summer of 1901 Prof. Thomas French, Jr., late Professor of Physics in the University of Cincinnati, examined the Spruce Creek placers and was on the ground over a month superintending considerable prospecting work and preparing a report on a part of the property, afterward bought by the Consolidated Spruce Creek Placers, Ltd. The following extracts from his excellent and very comprehensive report are herewith given, the full report being too lengthy for insertion in this prospectus:

"So far as the property itself is concerned while it may not be rich enough to pay by ordinary mining with pick and shovel, it is undoubtedly ground that would be regarded as a great prize in the United States. In the Atlin country ground that does not yield \$5 a day to the man with pick and shovel, is not good enough to work by this method, since a good man can earn that much by day labor. * * * In spite of the short season and the other untoward conditions referred to, the proposition before you is unusually promising. * * *

"The gravel in the creek can be best washed by ground sluicing through a bed-rock flume begun at the falls. For creek workings, the flats below the falls afford an adequate dump. This prime requisite of hydraulic working, therefore, is amply guaranteed through control of the Creek leases. * * *

"The benches on Spruce creek are well prospected by drifts and tunnels. They show good pay. * * *

WATER SUPPLY.

"On May 28th I measured the water above the falls and found the quantity to be 2000 inches. At the present time, June 7th, the flow is considerably greater and increasing. * * * The flow is subject to considerable variations. * * *

THE DUCHESS

"This lease comprises 25.3 acres. It is owned by Capt. John Martin, by whom it is being worked in a small way. [This lease was recently purchased by the Consolidated Spruce Creek Placers, Ltd.] * * * According to my measurements, Martin has washed out



SPRUCE CREEK FALLS, PROPOSED COMPANY'S DAM,

3,000 yards of gravel. I first tested the ground with the pan, getting excellent showings. Then at my request two longitudinal riffles were taken up from the first sluice box and a partial clean-up was made after a run of two days. The yield was one ounce and three pennyweights of coarse gold. From a small pit in which a new excavation of 60 yards had just been made, the yield was two and one-half ounces. Martin claims to have taken out \$6000, which is an average of \$2 per yard. I saw his receipts showing royalty paid last year on \$3,300, also an express receipt or transportation of \$1700 gold dust. The accompanying certificate of the gold commissioner shows that Martin has paid royalty on \$3800. This is proof positive that the average yield has not been less than \$1.25 per yard. Martin says frankly that he does not pay royalty on wages. I do not doubt the truth of his statement as to what he has taken out.

"Last year he took out about \$1000 per month, with the aid of two or three men and about 75 inches of water. The gravel varies in compactness, but most of it seems reasonably loose and well suited for hydraulic working. The reddish yellow gravel which is noted as containing good pay comes out strongly on the Martin pit, but has not yet been observed at any other point on this Creek.

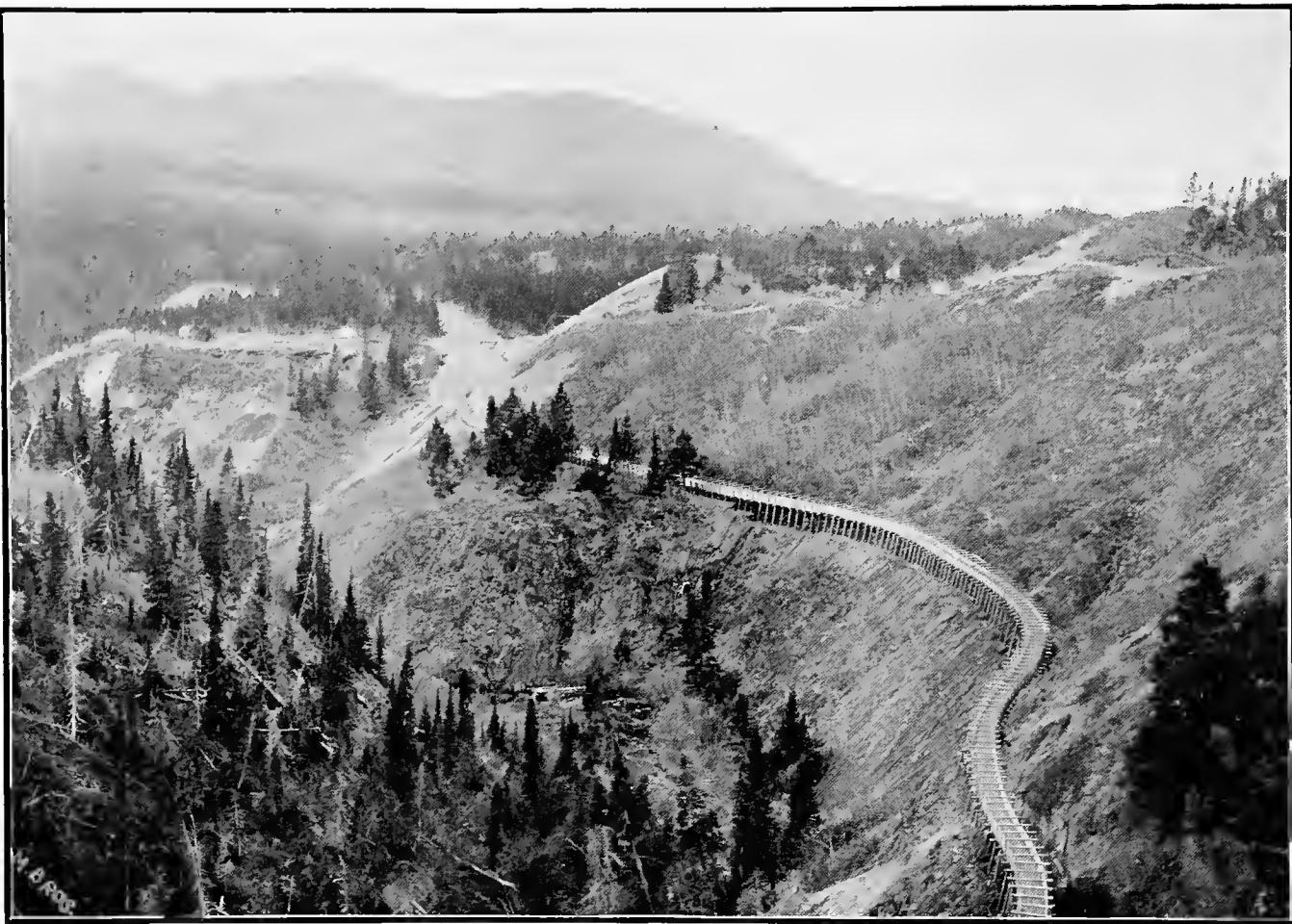
"The boulders are numerous and some of them are large.

"I send a sample of gold obtained from the yellow gravel of Martin's pit. It is coarser than the average yield of the ordinary gravel. The Martin product assays at \$17.66 per ounce in Seattle, which is higher than Pine Creek gold.

"The traces of an old channel are very marked on the Duchess lease. * * *

"If the estimate submitted proves at all adequate, the plant should be paid for in a short time and yield thereafter a good return each year. * * *

In a letter from Prof. French accompanying his report he says: "I am ready to stake some money in the enterprise."



HYDRAULIC MINING, SPRUCE CREEK, ATLIN DISTRICT, B. C.



EPORT OF R. C. LOWRY,

Hydraulic Engineer, of Atlin, B. C.
Asso. Mem. Inst. of C. E., London, Eng.

ON PROPERTY OF THE CONSOLIDATED SPRUCE CREEK PLACERS, LTD.

The property controlled by the Consolidated Spruce Creek Placers, Limited, is situate on Spruce Creek, Atlin Mining Division, Cassiar District, British Columbia. The 60th parallel of latitude is about 30 miles north of the property.

Situation and Extent of Property, and General Features

Spruce Creek is a tributary of Pine Creek, the latter being the largest stream entering Atlin Lake, which it does near Atlin town, and these waters are among the head feeders of the Yukon River. Pine Creek has a maximum flow of about 30,000 miners' inches. The grade of the bed of Pine Creek, between the point where Spruce Creek joins the latter and the lake, is about 60 feet to the mile. Atlin Lake is a body of water over 60 miles long, with an average width of about four miles, and is of great depth. The lake being the ultimate depository of debris from mining operations, these features are satisfactory.

The property under reference includes five creek leases, extending from the junction of Spruce and Pine Creeks up the former creek, taking in the bed and the first benches for about two and a half miles. On the left, or south bank, in this reach there is, besides, a group of three leases, aggregating to 240 acres in area, with a frontage on Spruce Creek, and covering a width of nearly a half mile back from the creek. Another Creek Lease covers the bed and first benches of Little Spruce Creek for half a mile, measuring from the junction of the latter stream with Spruce Creek, and between these two creeks there are five leases, aggregating to 131.1 acres in area, and taking in this ground for a length of over one mile.



HYDRAULIC MINING, SPRUCE CREEK, ATLIN DISTRICT, B.C., SHOWING THE LARGEST DERRICK IN THE NORTH.

On the right, or north bank, of Spruce Creek, in this reach, are two more bench leases, aggregating to 93.3 acres in area.

A good wagon road connects the property with Atlin, distant about six miles, and a considerable quantity of timber of fair quality for general purposes is standing on the bench leases, and is available for use by the corporation.

Spruce Creek is about 15 miles long, and is confined on the lower six miles of its course by gravel benches, which rise rapidly to a height of from about 30 to over 130 feet. The tunnels that have been driven by placer miners under these gravel benches run through an old river wash, and from the extent and nature of this, it appears certain that at one time a much larger stream than the present one traversed the Spruce Creek Valley.

At about one mile from the mouth of Spruce Creek, the Falls are situated; here is a drop of about 40 feet.

The fall of the creek bed within the length embraced by the property under discussion is fairly regular, the average grade being about 180 feet to the mile, or 3.4 per cent. Between the falls referred to above and a point opposite to the head, or eastern end, of the Kimberly Lease, the drop is about 380 feet, or a grade of 3.2 per cent.

The discharge of Spruce Creek was gauged by me on the 3rd of August, 1899, at a point about three-quarters of a mile below Discovery, and was then found to be 2,450 miners' inches. The maximum flow in the month of July may be taken as at least double this, or say 5,000 inches, and the average at about 2,000 inches.

The conformation of the valley is such that suitable sites for pressure boxes can be found within easy distance of the creek to give an effective head of from 150 to 300 feet above creek bed, with a length of from not more than $1\frac{1}{2}$ to $3\frac{1}{2}$ miles of ditch.

Description of
Spruce Creek



HYDRAULIC MINING IN NORTHERN BRITISH COLUMBIA.

By permission Hon. W. F. Robertson,
Department of Mines.

The work done by placer miners, in open cuts and drifts, in the benches of Spruce Creek, offered an opportunity for ascertaining the value and nature of gravel at but small cost and trouble. I have inspected and tested a large number of these. There are about 30 drifts and many open cuts in both banks, between Discovery Claim and the point where Little Spruce joins the main creek. The drifts range in length from 30 to 200 feet, and the extent of ground moved in some of the cuts, notably in the Duchess Lease, is large. The value of gravel mined in the drifts ranged between \$1 and \$10 per cubic yard, and a notable fact is, that many of these tunnels are not on bedrock, while in very few cases have they reached rim-rock.

Prospecting Work
Done and Values Ob-
tained

The extent of workable ground included in the property is very large. As mentioned further on in this report, it is proposed to use the Creek Leases, situated below or west of the falls on Spruce Creek, as dumping ground, so that the ground will not be mined. Passing over the area intervening between the falls and the mouth of Little Spruce, which ground was acquired principally to prevent interference, we reach the Duchess Lease, where it is proposed to open mining operations, and carry these up through the proven gravel lying in the Duchess, Pretoria, Bloemfontein, Mafeking and Kimberly Leases, on the left or south bank of the creek, and Vernon and Plumas Leases, on the right or north bank. I estimate the volume of ground here running at least 50 cents per cubic yard, to be 10,000,000 cubic yards. There is besides a larger extent of ground that will probably carry lower values, but will, I believe, pay to work.

Extent of Workable
Ground and Probable
Value

The gravel is not frozen, and is amenable to treatment by the hydraulic method of mining. The bulk of the boulders seen could be sluiced away.



HYDRAULIC NOZZLE IN OPERATION IN NORTHERN BRITISH COLUMBIA. THIS HYDRAULIC MINE PRODUCED \$353,000 IN GOLD DURING THE SEASON OF 1900.

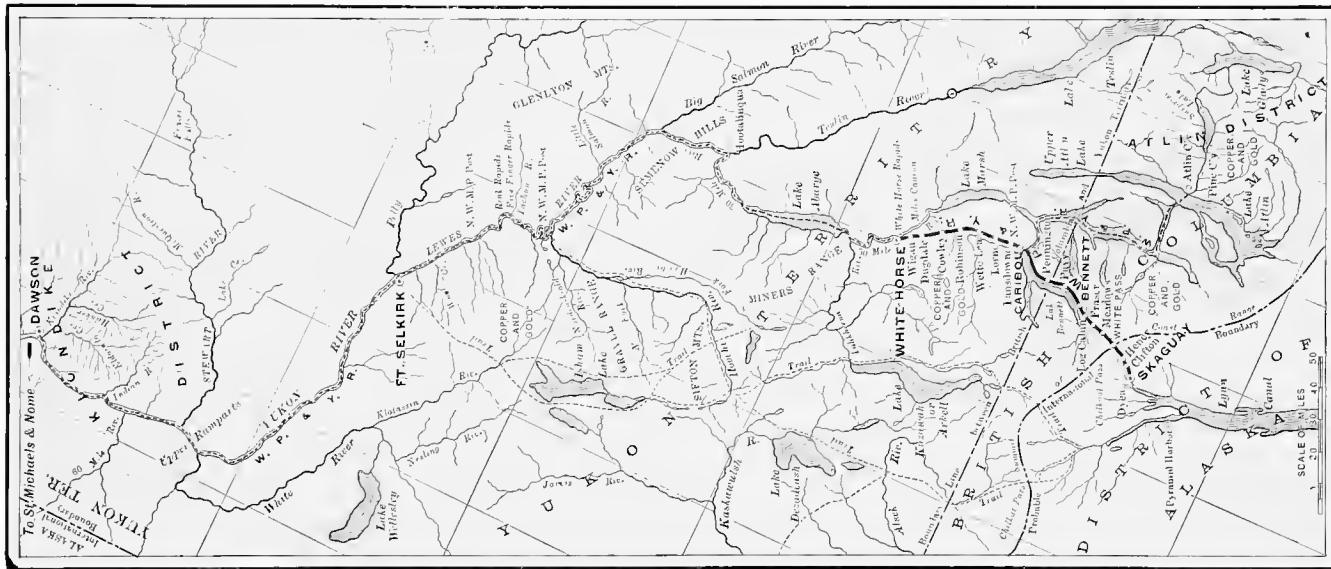
By permission Hon. W. F. Robertson,
Department of Mines.

The average quantity of water obtainable from Spruce Creek and Little Spruce Creek water at present would not be sufficient to work the ground on the scale proposed, but this quantity can be supplemented by bringing water onto the ground from Pine Creek, or by tapping the O'Donnell Creek Valley, lying to the east of the source of Spruce Creek. Both methods are feasible, and the cost of either would be about \$20,000. An ample supply of water can be secured from either Pine Creek or the northern feeders of O'Donnell Creek. I would propose to bring in 2,000 miners' inches from one of these sources, in order to have a supply of 4,000 inches available for working. The ground is all good for ditching.

The dump will be at the Falls of Spruce, referred to above. The debris will have a Dump length of one mile of Spruce and three miles of the broad Pine Creek Valley, besides the practically unlimited capacity of Atlin Lake, in which to settle. The dumping facilities are exceptionally good.

As already stated, it appears advisable to first open up a face on the Duchess Lease, Proposed Method of Working Mine near where Little Spruce joins the main creek. This will involve the construction of a bedrock flume of 4x6 feet, about 8,000 feet long, to reach the dump at the Falls of Spruce Creek. This sluice line would be laid from bedrock at the Duchess Lease to a grade of 3 per cent. and carry riffle blocks 12 inches thick. A ditch for the supply of 2,000 inches of water from Spruce Creek would traverse the left or south bank of Spruce Creek for a length of about $2\frac{1}{2}$ miles, delivering the water at pressure box situated on the Pretoria Lease, so as to afford a head of at least 200 feet at the working face.

If it be decided to bring in a supplementary supply from Pine Creek, a ditch about $4\frac{1}{2}$ miles long, to carry 2,000 inches, would come in on the right or north bank of Spruce Creek



WHITE PASS & YUKON ROUTE, SKAGWAY TO ATLIN, B. C.

at the Vernon Lease. The main pipe from pressure box would be 30 inches in diameter of 10 B. W. G. This would bifurcate at a Y into pipes of 24 inches diameter and 12 B. W. G., and the last pipes would taper down to 16 inches diameter and 14 B. W. G. at the monitors. Two No. 6 hydraulic giants would be used, taking 6 and 7 inch nozzles. Near the fork, on the 24 inch pipes, two 24 inch cast iron water gates will be required.

For all these items and others, the annexed approximate estimate of cost of installation provides. The rates in this estimate are apparently high, but the high cost of transportation for pipe and supplies over the W. P. & Y. Railway system has to be taken into account, and also the fact that the prevailing rate of wage is \$4 per day.

The cost of installing plant will be about \$125,000, and if this work is energetically carried on, it should be possible to begin opening up a face on the Duchess Lease towards the end of the second season; but returns should not be expected until the third season.

Working 4,000 miners' inches of water with such gravel as will be mined on the property under reference, I estimate that 8,000 cubic yards of material will be moved per diem. This would mean a duty of two cubic yards per miners' inch. The working season on Spruce Creek may be taken as extending from about the 20th of May until the 10th of October, or, say, a period of 140 days. The cost of working should not exceed 10c per cubic yard of gravel, so that the estimated net return is 40c per cubic yard, or $8,000 \times 40c = \$3,200$ per day; and $\$3,200 \times 140 = \$448,000$ per season. In order to guard against overestimating returns, I would take half of this, or, say, \$250,000, as the probable yearly income from the mine. It will take a period of more than 20 years to work out these gravel deposits.

Probable Cost of Installing Plant and Time Required to Open Operations

Probable Return and Time for Which Yield May be Expected

R. C. LOWRY,

45 Assoc. Mem. Inst. C. E., London, Eng.

APPROXIMATE GENERAL ESTIMATE OF COST OF WORKS.

600,000 ft. of lumber in sluices, tailings flumes, etc., at \$46 per mille.....	\$ 27,600
600,000 ft. erecting same, including nails, at \$10 per mille	6,000
550,000 ft. riffle blocks at \$35 per mille, including setting	19,250
800 ft. riveted pipe, 30 in. in diameter of B. W. G., including freight and laying at \$6.50 per ft.	5,200
100 ft. riveted pipe, 24 inches in diameter of 12 B. W. G., including freight and laying, at \$4.25 per ft.	425
100 ft. riveted pipe, 22 inches in diameter of B. W. G., including freight and laying, at \$4 per foot	400
100 ft. riveted pipe, 20 inches in diameter of 14 B. W. G., including freight and laying, at \$3 per ft.	300
700 ft. riveted pipe, 18 inches in diameter of 14 B. W. G., including freight and laying, at \$2.50 per ft.	1,750
1,000 ft. riveted pipe, 16 inches in diameter of 14 B. W. G., at \$2.25 per ft.....	2,250
(The above figures for pipe will include necessary Y's, reducers and air valves, also coating of iron work.)	
2 C. I. 24 inch gates, including freight, etc., at \$450 each	900
2 Hydraulic derricks, at \$1,500 each.....	3,000
2 Hydraulic giants, No. 6 size, with 6 and 7 inch nozzles, including freight, at \$600 each	1,200
Riveting and other tools, forges, etc.....	1,500
Ditch $2\frac{1}{2}$ miles long to carry 2,000 inches of water on Spruce Creek, and pres- sure box	15,000
Ditch to supplemental supply of Spruce Creek from Pine Creek or from O'Donnell Creek Valley	20,000
Engineering expenses	3,000
Quarters for workmen, etc.	1,500
Contingencies and unforeseen charges, at about 15 per cent.	15.725
 Total	 \$125,000

CONCLUSION.

Taking the estimate in one of the above reports, the volume of gravel which can be handled in the next 20 years, worth fifty cents per cubic yard in the property, is valued at \$11,400,000. Another report says that it will take from 20 to 30 years to exhaust the PAY GRAVEL NOW IN SIGHT and that tests show that \$600,000 per year will be netted after the payment of all expenses. Thus in 30 years \$18,000,000 over and above the cost of taking it out will be produced from the gravel NOW IN SIGHT. If we take 50 per cent. of this in order to provide for any contingency that possibly might arise, we still have \$9,000,000 from visible pay gravel.

There is besides a large area of ground carrying lower values which can be mined at a large profit.

Operated on the scale that it is intended to adopt, this mine will within three years be one of the largest alluvial gold mines on the American Continent. It has all the requirements for success, rich gravel, an ample supply of water under adequate pressure, good grade and great dumping capacity.

These properties cannot possibly be worked out in twice twenty years. The gold that will be produced, as can readily be seen, will be enormous and such as to make the Consolidated Spruce Creek Placers, Limited, one of the greatest dividend paying gravel mines ever opened up.

It may seem desirable, after working the property on the scale now contemplated, to increase the amount of water supply and make other additional improvements, to enable the

Value of the Gravel
Deposits

Assurance of Success

company to handle double the capacity of the plant now proposed, which could produce more than twice the profit estimated in the engineer's report.

This company was organized and has been incorporated under the laws of the state of Washington. The names of the officers of the company are set forth on page 1 of this prospectus. The articles of incorporation were duly filed with the secretary of state and a charter was issued to the company on May 15, 1901. Incorporation and Capital

The capital is \$2,500,000. The par value of the shares being \$1.00. The stock is fully paid and non-assessable. The articles and by-laws were framed with the assistance of Judge Burton E. Bennett, late United States attorney for the District of Alaska; Judge Foote, ex-city treasurer of Seattle, and Elbert F. Blaine, attorney of the Denny-Blaine Land Company. Ably Organized

One million two hundred and fifty thousand shares, or one-half of the entire capital stock of the company was set aside as treasury stock. Treasury Stock

In order to provide further funds for the full equipment of these valuable properties, the Company offers for sale a limited amount of the treasury stock to persons of approved standing. Provisions for Raising Funds for Equipment and Operation

At the price at which this stock is offered to the investor, the annual returns to the shareholders will prove it to be a very profitable investment. An Opportunity for a Safe and Profitable Investment

Any further information can be had by corresponding with

CONSOLIDATED SPRUCE CREEK PLACERS, LIMITED,

613 PACIFIC BLOCK,

SEATTLE, WASHINGTON.



THE Foremost publication in the United States devoted to the mining industry is the Engineering and Mining Journal, 253 Broadway, New York. If further information is desired about Spruce Creek and the Atlin District reference is made to the issues of this journal of August 19 and November 18, 1899 and June 16 and September 15 and 29, 1900.



THE METROPOLITAN PRESS



